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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/898,948	07/03/2001	Greg Hetherington	GRIHAC P22AUSD1	7448

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EXAMINER
COLBERT, ELLA

ART UNIT	PAPER NUMBER
3624	

DATE MAILED: 12/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/898,948	HETHERINGTON, GREG
	Examiner	Art Unit	
	Ella Colbert	3624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>22 September 2005</u>.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>54-56,58-75,77-83,85-94,103 and 107-110</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☒ Claim(s) <u>67,68,85,86 and 107-110</u> is/are allowed.

6) ☒ Claim(s) <u>54-56,58-64,69-75,77-83,87-94 and 103</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1.   Claims 54-56, 58-64, 67-75, 77-83, 85-94, 103, and 107-110 are pending.

Claims 54, 56, 58-63, 67, 69, 70, 72, 73, 75, 77-82, 85, 90, 92-94, 103, and 107-110

have been amended in this communication filed 09/22/05 entered as Response After

Non-Final Action.

2.   The claim objections for claims 54-56, 58-64, 67-75, 77-83, 85-94, 103, and 107-

110 have been overcome by Applicants' submission of a legible copy of the claims and

is hereby withdrawn.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all
obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed
> or described as set forth in section 102 of this title, if the differences between the
> subject matter sought to be patented and the prior art are such that the subject
> matter as a whole would have been obvious at the time the invention was made
> to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was
> made.

4.   Claims 54-56, 58, 59, 73-75, 77, 78, 93, 94, and 103 are rejected under 35

U.S.C. 103(a) as being unpatentable over Gupta et al (5,826,258), hereafter Gupta in

view of (US 5,966,686) Heidorn et al, hereafter Heidorn.

With respect to claims 54 and 73 Gupta teaches, examining elements of the free-

format data to determine attributes ... (col. 5, lines 5-31), by examining a content of the

elements and the contextual relationships of the elements to each other, to determine

semantic and syntactic attribute information about the free-format data (col. 4, lines 32-

41 and col. 5, lines 47-57 and fig. 4), producing additional data relating to the attribute

information in a form of a text object, the text object comprising: an attribute-type

identifier which identifies an attribute-type of the elements of the free-format data (col. 6, lines 32-53), a text node tree which includes pointer means enabling access to the elements of the text object and the free-format data (col. 4, lines 41-50). Gupta fails to teach, additional data being accessible by a query processing means to provide answers to the queries relating to the semantic and syntactic attribute information about the free-format data and access the free-format data to manipulate the free-format data.

Heidorn teaches, additional data being accessible by a query processing means to provide answers to the queries relating to the semantic and syntactic attribute information about the free-format data and access the free-format data to manipulate the free-format data (col. 1, lines 13-21 and col. 2, lines 11-27). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have additional data accessible by a query processing means to provide answers to the queries relating to the semantic and syntactic attribute information about the free-format data and access the free-format data to manipulate the free-format data and to modify in Gupta in view of Gupta's teaching of querying (searching) (as taught in the background section, columns 1 and 2) and because such a modification would allow Gupta to have relational database queries that can be utilized to find information of interest including attributes in syntactic and semantic information. However, Gupta does teach, producing virtual data fields associated with each record ... and the associated elements, where each record is provided with associated virtual data fields ... to semantic and syntactic information ... and access to the associated elements (col. 5, lines 7-39 and col. 6, lines 1-23).

With respect to claims 55 and 74, Gupta teaches, the free-format data is stored as a record in a free-format field of a database (col. 8, lines 21-30).

With respect to claim 56, Gupta teaches, the free-format data remains stored in the computing system as originally stored ... accessed by other applications (col. 8, lines 31-43).

With respect to claims 58 and 77, Gupta fails to teach, the text object includes a value indicating a character length of an element of the free-format data. Heidorn teaches, the text object includes a value indicating a character length of an element of the free-format data (col. 12, lines 40-55). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a text object with a value indicating a character length of an element of free-format data and to modify in Gupta because such a modification would allow Gupta to have characters in words with different lengths and the permutations generated for a particular address and the values according to their association with a particular attribute.

With respect to claims 59 and 78, Gupta fails to teach, the text object includes a value indicating whether an element is one of a low level in a syntactic hierarchy or higher level whereby the value may be used for matching purposes when matching the free-format data with other free-format data processed in accordance with the method. Heidorn teaches, the text object includes a value indicating whether an element is low level in a syntactic hierarchy or higher level whereby the value may be used for matching purposes when matching data with other data processed in accordance with the method (col. 11, 55-67 and col. 12, lines 1-14). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the text object to include a value indicating whether an element is one of a low level in a syntactic hierarchy or higher level whereby the value may be used for matching purposes when matching the free-format data with other free-format data processed in accordance with the method and to modify in Gupta because such a modification would allow Gupta to

have words with the highest values placed above and used to establish the order of precedence. Syntactic hierarchies are used to provide an organizational framework that reflects the logical links or relationships between separate elements.

With respect to claims 75 Gupta and Heidorn fails to teach, the examining means does not affect the storage of the data, but it would have been obvious to one having ordinary skill in the art at the time the invention was made to not have the examining means to affect the storage of the data and to modify in Gupta because such a modification would allow Gupta to have the data typically stored on a computer readable storage medium like a hard drive or memory and to be typically performed by a user, the step can be automated so that the step is performed by a programmed computer system.

With respect to claims 93 and 94, Gupta teaches, a plurality of free-format data records (col. 6, lines 24-43), comprising steps of storing additional data relating to semantic and syntactic information (attributes) about the data for each data record (col. 8, lines 21-40), the additional data being in the form of a text object associated with each data record (col. 8, lines 50-59), the text object including pointer means enabling access to elements of the text object and each free-format data record (col. 4, lines 41-50). Gupta fails to teach, the additional data being accessible by a query processing means to provide at least one of the answers to queries relating to the semantic and syntactic information about the data and to access the data to manipulate the data. Heidorn teaches, the additional data being accessible by a query processing means to provide at least one of the answers to queries relating to the semantic and syntactic information about the data and access the data to manipulate the data (col. 1, lines 13-21 and col. 2, lines 11-27). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the additional data accessible by a

query processing means to provide at least one of the answers to queries relating to the

semantic and syntactic information about the data and/or to access the data to

manipulate the data in view of Gupta's teaching of querying (searching) (as taught in the

background section, columns 1 and 2) because relational database queries can be

utilized to find information of interest including attributes in syntactic and semantic

information (see Gupta at col. 1, lines 57-65).

With respect to claim 103, Gupta teaches, computer readable memory storing

instructions for controlling a computer to process free-format data stored in a computing

system (col. 3, lines 55-67 and col. 4, lines 1-11).

5.   Claims 60-64, 69-72, 79-83, 90, 91, and 92, are rejected under 35 U.S.C. 103(a)

as being unpatentable over Gupta and Heidorn in view of Chuah et al (5,515,534),

hereafter Chuah.

With respect to claims 60 and 79, Gupta and Heidorn fail to teach, the text object

including a match weighting value for a first element of the free-format data which can

be used to determine the significance of the first element when matching with other

free-format data.

Chuah teaches this in col. 2, lines 13-56, col. 3, lines 49-67, and col. 4, lines 1-

35. Gupta proposed producing additional data relating to the attributes; Chuah

proposed a match weighting value for a first element, and determining the significance

of the first element when matching free-format data. Gupta and Chuah together

proposed producing additional data, a match weighting value for a first element, and

determining the significance of a first element when matching free-format data. It

would have been obvious at the time the invention was made to one having ordinary

skill in the art of match weighting values to make a determination of the significance of a

first element and to modify in Gupta because the processing of the free-matching

elements when weighted are given scores. For example the match is a single word "DC" which matches a state attribute and generates an associated score 0.15 using the count 10 and k_1 and w_1 values (see Chuah, column 5, lines 46-50).

With respect to claims 61 and 80, Gupta and Chuah fail to teach, the text object comprises component nodes arranged according to a semantic structure of the free-format data and arranged in a hierarchy corresponding to the semantic structure of the free-format data and each of the component nodes including additional data relating to a corresponding element of the free-format data. Heidorn teaches, the text object comprises component nodes arranged according to the semantic structure of the free-format data and arranged in a hierarchy corresponding to the semantic structure of the free-format data and each of the component nodes including additional data relating to a corresponding element of the free-format data (col. 11, lines 8-28). It would have been obvious at the time the invention was made to one having ordinary skill in the art of component nodes to arrange the nodes in a hierarchy corresponding to the semantic structure and to modify in Gupta because such a modification would allow Gupta to have each node with a unique identifier and a node value containing the word and syntactic information on the word in the hierarchy.

With respect to claims 62 and 81, Gupta and Heidorn fail to teach, generating matching values for comparing an element of the free-format data with an element of other free-format data.

Chuah teaches this in col. 4, lines 39-56. Gupta proposed enabling access to the elements of the free-format data; Chuah proposed the generation of matching values when comparing an element of free-format data. Gupta and Chuah together proposed accessing elements of free-format data and generating matching values when comparing an element of free-format data. It would have been obvious at the time the

invention was made to one having ordinary skill in the art of comparing elements of free-format data to generate matching values because the elements of the values when matched are compared when forming the entries in the dictionary and passes the results to be processed (see Chuah, figures 4 and 6).

With respect to claims 63 and 82, Gupta, Heidorn, and Chuah fail to teach, the matching value is a phonetic value for phonetically comparing elements of free-format data, but it would have been obvious at the time the invention was made to one having ordinary skill in the art of phonetic values to have a matching value because phonetic values are given a classification according to their assigned matched value represented by a distinct character.

With respect to claims 64 and 83, Gupta and Heidorn fail to teach, the text object includes implied data relating to information implied from the free-format data. Chuah teaches, this in col. 8, lines 63-67 and col. 9, lines 1-4. Gupta proposed processing free-format data; Chuah proposed a text object with implied data related to information from the free-format data. Gupta and Chuah together proposed processing free-format data, a text object with implied data related to free-format data information. It would have been obvious at the time the invention was made to one having ordinary skill in the art of implied data to have a text object because the free-formatted data record is characterized by a plurality of data words comprising sequences of data words associated with the attribute fields of the data record.

With respect to claims 69, 87, and 88, Gupta and Heidorn fail to teach, carrying out a domain construction process to construct a domain object from domain definition data files. Chuah teaches this in col. 2, lines 13-29 and col. 8, lines 7-29. Gupta proposed steps for processing free-format data; Chuah proposed constructing a domain object from domain definition data files. Gupta and Chuah together proposed steps for

processing free-format data, and constructing a domain object from domain definition files. It would have been obvious at the time the invention was made to one having ordinary skill in the art of domain construction to construct a domain object from domain definition data files because the domain is constructed according to the attribute of the data that points to or connects to instances of the object.

Gupta, Heidorn, and Chuah fail to teach, the domain object being arranged to carry out the examination process by parsing the free-format data in accordance with grammar rules, but it would have been obvious at the time the invention was made to one having ordinary skill in the art of domain objects to parse the free-format data according to the grammar rules because the domain object is arranged to carry out the examination process by parsing the free-format data according to the grammar rules since the parsing is done by comparing the string to be parsed to a grammar which defines possible structures.

With respect to claim 89, Gupta and Heidorn fail to teach, a domain constructor for carrying out the domain construction process. Chuah teaches this in col. 4, lines 19-35 and col. 7, lines 29-55. Gupta proposed processing free-format data; Chuah proposed a domain constructor for the domain construction process. Gupta and Chuah together proposed processing free-format data and constructing a domain construction process. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a domain constructor for carrying out the domain construction process because the domain is constructed according to the attribute of the data that points to or connects to instances of the object.

With respect to claims 70 and 90, Gupta, Heidorn, and Chuah fail to teach, the domain definition data file includes character definition data, regular expression definition data and grammar data, but it would have been obvious at the time the

invention was made to one having ordinary skill in the art of domain definition files to have character definition data, regular expression definition data, and grammar data.

With respect to claims 71 and 91, Gupta and Heidorn failed to teach, wherein the free-format data is postal address data. Chuah teaches, wherein the free-format data is postal address data (col. 3, line 45-col. 4, line 35, col. 8, lines30-48, fig. 2, and fig. 3. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the free-format data to be postal address data and to modify in Gupta because such a modification would allow Gupta to employ commas (,) to delimit the contents of fields from one another.

With respect to claims 72 and 92, Gupta teaches, the query processing means can carry out normal database operations on the data via the additional free-format data (col. 4, line 62-col. 5, line 28).

Allowable Subject Matter

6.   Claims 67, 68, 85, 86, 107-110 are allowed.

7.   The following is a statement of reasons for the indication of allowable subject matter: Applicants' step of producing a text object index including the attribute type identifiers for the elements of each of the data records with pointers to each of the free-format data record with the text object index being queried by queries related to semantic and syntactic attribute information about the free-format data and the free-format data being accessed via the text object index and a means for producing additional data arranged to produce a text object index including attribute-type identifiers for elements of each of the free-format data records and pointers to each of the free-format data records and wherein the query processing means is arranged to access at least one text object index to provide answers to queries relating to the

semantic and syntactic attribute information about the free-format data record and each

entry in a text object index includes a key value giving a value representative of a

feature an element associated with an attribute-type identifier, was not disclosed by,

would not have been obvious over, nor would have been fairly suggested by the prior

art of record.

Any comments considered necessary by applicant must be submitted no later

than the payment of the issue fee and, to avoid processing delays, should preferably

accompany the issue fee. Such submissions should be clearly labeled "Comments on

Statement of Reasons for Allowance."

Response to Arguments

8.   Applicant's arguments filed 06/21/05 have been fully considered but they are not

persuasive.

Issue no. 1: Applicants' argue: A text object index and a text object are different

elements as discussed in prior responses. The text object is an additional layer of data

which allows an interface to the free-format data (which remains in free-format form and

the text object index is an index including information about text objects that have been

produced in accordance with the present invention has been considered. Response:

The application would be allowable if Applicants' would incorporate the allowable

subject matter as follows into the independent claims: **producing a text object index**

including the attribute type identifiers for the elements of each of the data records

with pointers to each of the free-format data record with **the text object index being**

queried by queries related to semantic and syntactic attribute information about

the free-format data and **the free-format data being accessed via the text object**

index and a means for **producing additional data arranged to produce a text object**

index including attribute-type identifiers for elements of each of the free-format

data records and pointers to each of the free-format data records and wherein **the**

query processing means is arranged to access at least one text object index to

provide answers to queries relating to the semantic and syntactic attribute

information about the free-format data record and **each entry in a text object**

index includes a key value giving a value representative of a feature an element

associated with an attribute-type identifier.

Conclusion

9.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

        Jensen (US 5,146,406) disclosed a syntactic component and semantic

processing of natural language.

        Kuga et al (US 5,276,616) disclosed index entries, an identifier field, and a

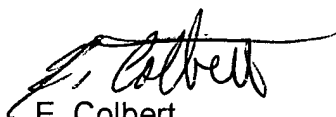syntax analyzing module.

Inquiries

10.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Ella Colbert whose telephone number is 571-272-6741.

The examiner can normally be reached on Tuesday-Thursday, 6:30AM-4:00PM.

        If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Vincent Millin can be reached on 571-272-6747. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

E. Colbert
Primary Examiner
December 8, 2005